

A. D. 1863. April 15. N° 952.
NEWTON'S SPECIFICATION.

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2. 11. 1863

FIG. 3.

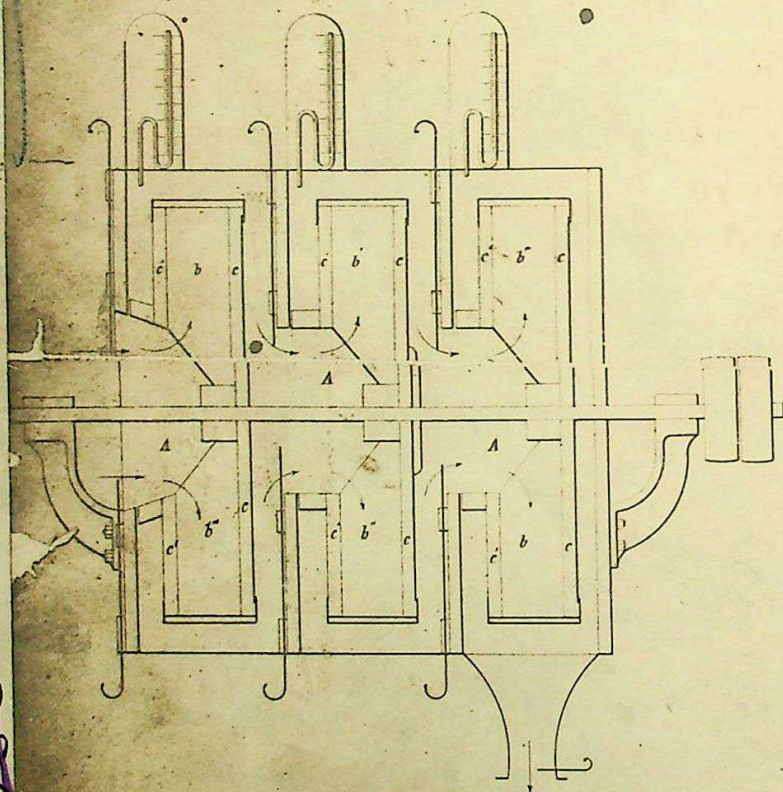
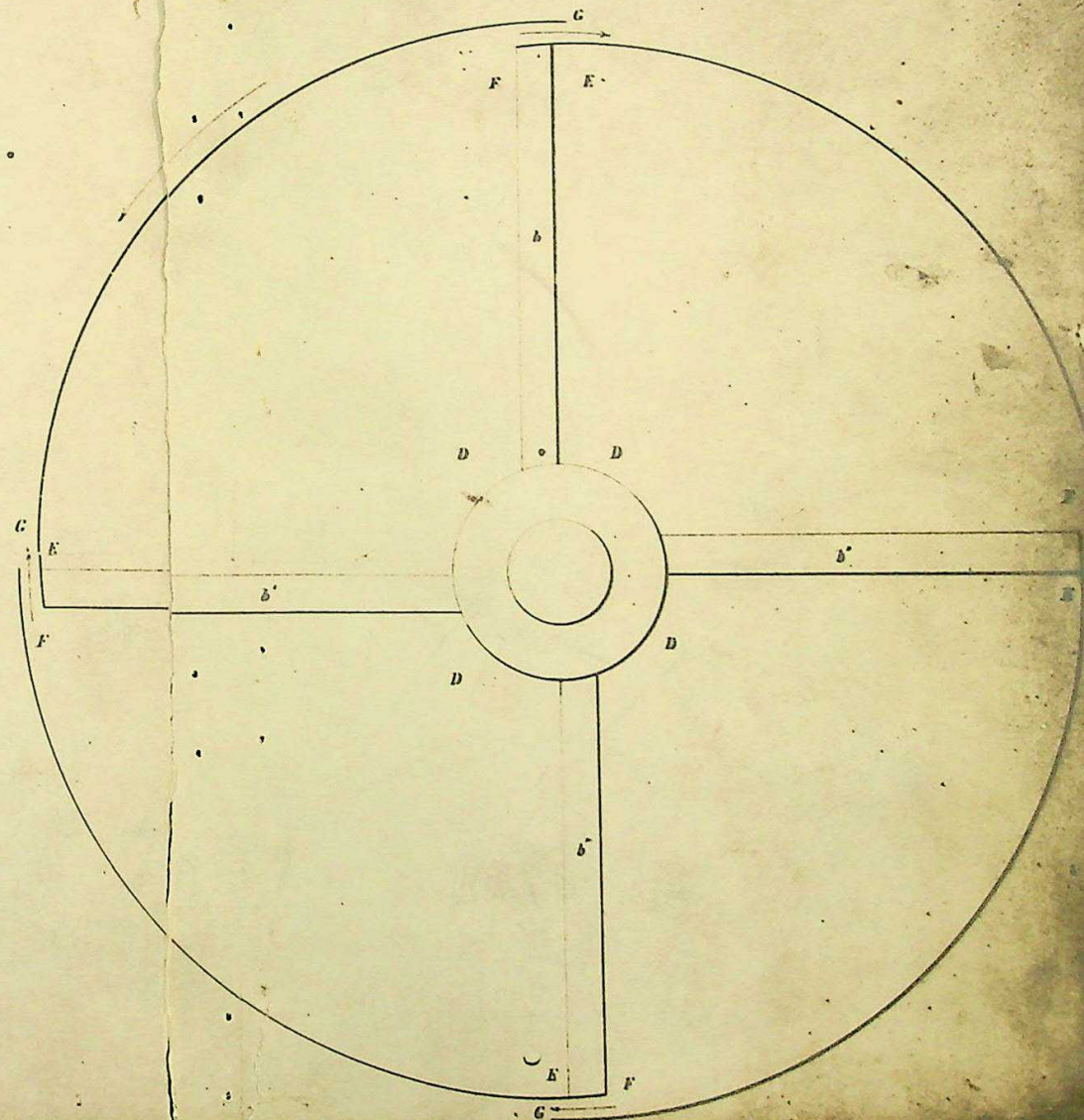


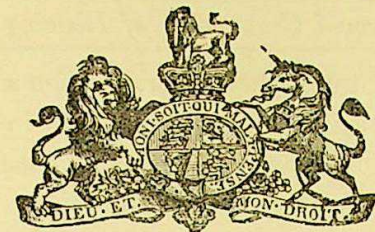
FIG. 1.



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A.D. 1863, 15th APRIL. N° 952.

Blowing Apparatus.

LETTERS PATENT to Alfred Vincent Newton, of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Mechanical Draughtsman, for the Invention of "AN IMPROVED CONSTRUCTION OF BLOWING APPARATUS."—A communication from abroad by Joseph Perrigault, of Rue St. Sebastien, Paris, in the Empire of France.

Sealed the 18th September 1863, and dated the 15th April 1863.

PROVISIONAL SPECIFICATION left by the said Alfred Vincent Newton at the Office of the Commissioners of Patents, with his Petition, on the 15th April 1863.

I, ALFRED VINCENT NEWTON, of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Mechanical Draughtsman, do hereby declare the nature of the said Invention for "AN IMPROVED CONSTRUCTION OF BLOWING APPARATUS," to be as follows:—

This Invention relates to a novel arrangement of blowing apparatus for obtaining a powerful blast of air by means of rotary fans or blowers. To this end two, three, or more blowers are mounted one behind the other in the same case, but in separate chambers, which communicate the one with the other by central openings in the partitions which divide the case into chambers.

the blowers are by preference made in the following manner:—

each fan is placed apart carry leaves which ex

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that is drawn in at the centre of the blower. When a series of such blowers is set in action the revolution of the first will draw in air and expel it at its periphery. The air will then pass to the next chamber and entering the second blower will be still further compressed. From this blower the air will escape to, say, a third chamber, and be again still further compressed, when 5 it may be employed for any purpose for which strong blasts are required. Or the compressed air may be brought under the action of more rotary blowers before it is delivered for use. Each chamber may with advantage be provided with a pressure gauge, and valves are fitted to the partitions for regulating the admission of air from one chamber to the other. The speeds and capacities 10 of the fans will be determined according to the work to which the blowing apparatus is to be applied.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Alfred Vincent Newton in the Great Seal Patent Office on the 13th October 1863.

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TO ALL TO WHOM THESE PRESENTS SHALL COME, I, ALFRED VINCENT NEWTON, of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Mechanical Draughtsman, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Fifteenth day of April, in the year of our Lord 20 One thousand eight hundred and sixty-three, in the twenty-sixth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Alfred Vincent Newton, Her special license, that I, the said Alfred Vincent Newton, my executors, administrators, and assigns, or such others as I, the said Alfred Vincent Newton, my executors, admi- 25 nistrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "**AN IMPROVED CONSTRUCTION OF BLOWING APPARATUS**," 30 being a communication from abroad by Joseph Perrigault, of Rue Saint Sebastien, Paris, in the Empire of France, upon the condition (amongst others) that I, the said Alfred Vincent Newton, by an instrument under my hand and seal, should par

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within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Alfred Vincent Newton, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the Drawing hereunto annexed, and to the letters and figures marked thereon (that is to say):—

This Invention, as communicated to me from abroad, relates to a novel arrangement of blowing apparatus for obtaining a powerful blast of air by means of rotary fans or blowers driven at a moderate speed, which kind of blower the Inventor denominates a reaction blower. To this end a novel form of centrifugal blower is constructed capable of being used singly or in combinations of two, three, or more blowers, the same being mounted one behind the other in the same case, but in separate chambers, which communicate the one with the other by central openings in the partitions which divide the case into chambers.

The improved fan or blower is made in the following manner:—A pair of discs set at a suitable distance apart carry leaves which extend from the boss of the fan to the periphery, and the periphery is covered by curved plates of metal so arranged as to provide tangential vents for the air that is drawn in at the centre of the blower. When a series of such blowers is set in action the revolution of the first will draw in air and expel it at its periphery. The air will then pass to the next chamber and entering the second blower will be still further compressed. From this blower the air will escape to, say, a third chamber and be again still further compressed, when it may be employed for any purpose for which strong blasts are required. Each chamber may with advantage be provided with a pressure gauge, and valves are fitted to the partitions for regulating the admission of air from one chamber to the other. The speeds and capabilities of the fans will be determined according to the work to which the blowing apparatus is to be applied.

In the accompanying Drawing, Fig. 1 is a longitudinal vertical section of one of the improved blowers or fans; Fig. 2 is a transverse vertical section of the same, and Fig. 3 represents in transverse section three of the improved blowers set together and working in a compound case, such as that above described. Similar letters of reference denote like parts in all these Figures.

A is the eye or central opening in the blower through which the air enters; b, b^1, b^{11}, b^{111} , are the leaves of the blower, the number of which may be diminished or increased according to requirements; they are enclosed between and secured to the two discs C, C¹, one of which is pierced as at A for the

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admission of the air. The openings for the escape from the blower into its casing of the air (drawn in by the rapid rotation of the blower) are situate at the extremities of the leaves, and arranged in such manner that the air compressed by centrifugal force at D, E, F, can only escape at right angles to the radius and tangentially to the circumference of the discs. It will be understood that the compression of the air in the bottom of the chambers D, E, F, will increase with the speed of rotation, and that the more this pressure is augmented the greater will be the speed of the escaping air at G, and consequently the nearer will it approach the speed of the discs themselves. The orifices G for the escape of air must project very little from the circumference of the discs. The blowers are so mounted in their casing B that sufficient space only is left between the edges of the central opening A and the case as will suffice to prevent friction between them. 5 10

By a simple combination of the above described parts as shewn at Fig. 3 a very considerable degree of pressure may be obtained with a moderate driving speed. Thus, suppose a second blower to be employed which can only be supplied through its eye with air already compressed by the first blower, and a third blower to be supplied with the air further compressed by the second, and so on, a blast of air of very great pressure may be readily obtained; the first blower imparts the first compression to the air, the second compresses the already compressed air, the third still further compresses the air acted upon by the first and second blower, and the like effect may be enhanced by a further developement of the effects shewn at Fig. 3. 15 20

Having now set forth the Invention of An Improved Construction of Blowing Apparatus," as communicated to me from abroad, and explained the manner of carrying the same into effect, I desire it to be understood that under the above in part recited Letters Patent I claim, the construction or arrangement of blower above shewn and described, whether employed singly or combined with other blowers of the same kind, as and for the purpose specified. 25 30

In witness whereof, I, the said Alfred Vincent Newton, have hereunto set my hand and seal, the Tenth day of October, in the year of our Lord One thousand eight hundred and sixty-three.

A. V. NEWTON. (L.S.)

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1863.